

conclusion is suggested that Bates was mistaken in supposing that Asilid flies play no part as the enemies of *Heliconiæ* and *Ithomiinæ*.

7. LEPIDOPTERA WITH WARNING COLOURS SPECIALLY LIABLE TO THE ATTACKS OF PARASITIC INSECTS. (G. A. K. M.)

[The late Erich Haase in his work on mimicry (English translation "Researches on Mimicry," etc., Pt. II, Stuttgart, 1896) continually made the assumption that the immunity of *Danainæ*, *Acræinæ*, and other specially-protected groups is absolute, and extends to the attacks of parasitic Hymenoptera and Diptera as well as to those of insect-eating vertebrates. A little reflection upon the rate of multiplication of animals, and especially of insects, makes it clear that any such absolute immunity is an impossibility. A high degree of protection from the attacks of the generality of insect-eating animals will always be found to be compensated by the attacks of special enemies, and probably very largely by that of insect parasites. I brought forward this argument in 1890 ("Colours of Animals," London, p. 181); and Haase, without attempting to meet it, made the crude assumptions which will now be dismissed, once and for all, by the numerous observations recorded below.—E. B. P.]

Estcourt, Oct. 15, 1896.—We brought seventy-five larvæ of *Acræa anacreon* home with us from Ulundi to Estcourt, and no less than twenty of them were killed by a Dipterous parasite, so that, although it may be protected in the imago stage, the percentage of larval deaths must be very high.

Malvern, Feb. 21, 1897.—I certainly cannot understand Haase's attitude with regard to protection from parasites. There are such patent examples to disprove it among European "whites." Out of eight pupæ of *Acræa hortæ* that I bred this season no less than five were killed by a Dipterous parasite.

[I have also received from Mr. Marshall two cocoons and two imagines of an ichneumon bred from *Acræa cabira* at Malvern. They bear the date April 1897.—E. B. P.]

Umkomaas Mouth, Natal; Sept. 3, 1897.—I think it is highly probable that *Byblia ilithyia* will prove to be distasteful as you suggest; but so far as my experience goes

the larvæ are very free from parasites, which in my opinion tells somewhat against that view.

Salisbury, March 6-10, 1898.—Of four larvæ of *L. chrysippus* I have taken this season two were killed by a parasitic fly [probably a *Tachina*] which attacks many different butterfly larvæ.

In his "Rhopalocera Malayana" (p. 407) Mr. Distant writes: "Mr. W. F. Kirby has kindly drawn my attention to the fact that several species of *Chalcis* have been reared from East Indian Danaids."*

[Colonel J. W. Yerbury at Aden "lost a great number of *chrysippus* larvæ from the attacks of a large dipterous parasite, one of the *Tachininae*" (Journ. Bomb. Nat. Hist. Soc., 1892, p. 209).

Professor Félix Plateau, in his interesting paper on *Abraxas grossulariata*, L. (Mém. de la Soc. Zool. de France, tome vii, 1894, p. 375), also referred to on pp. 325-7, states that he found twenty-two caterpillars out of fifty-one, 43 per cent., attacked by insect parasites, viz. of Hymenoptera, two species of *Microgaster* and one of *Ichneumon*; of Diptera, the Tachinid *Erorista vulgaris* (Fallen). The caterpillar, *pace* Professor Plateau, is *most conspicuous*, and, as the Professor admits in the above-quoted paper, is refused by European insect-eating vertebrates with wonderful unanimity.

In the autumn of 1888 I found the conspicuous gregarious larvæ of *Pieris brassicæ* suffered to an enormous extent from the attacks of *Ichneumonidæ*. No less than 424 mature larvæ out of 631 died from this cause (Trans. Ent. Soc. Lond., 1892, p. 439). I have also observed an excessively high rate of mortality from the same cause among the conspicuous specially-defended larvæ of *Porthesia auriflua*. Dr. F. A. Dixey informs me that he has found the larvæ of *Euchelia jacobææ* much infested by ichneumons.—E. B. P.]

8. EXPERIMENTS ON LIZARDS AND FROGS. (G. A. K. M.)

[Experiments with lizards and frogs were few and the results negative. A large number of the S. African species are no doubt specialized to eat only certain kinds of food, and these would be useless for experiment if their natural

* The names of *Chalcis cuplea*, Hope, and *C. albicrus*, Klug, are specially mentioned.